ENVIRONMENTAL ASSESSMENT

Crossbar Management Area:
New Water Wells

U.S. Department of the Interior
Bureau of Land Management
Amarillo Field Office
Amarillo, TX

DOI-BLM-NM-060-2013-003

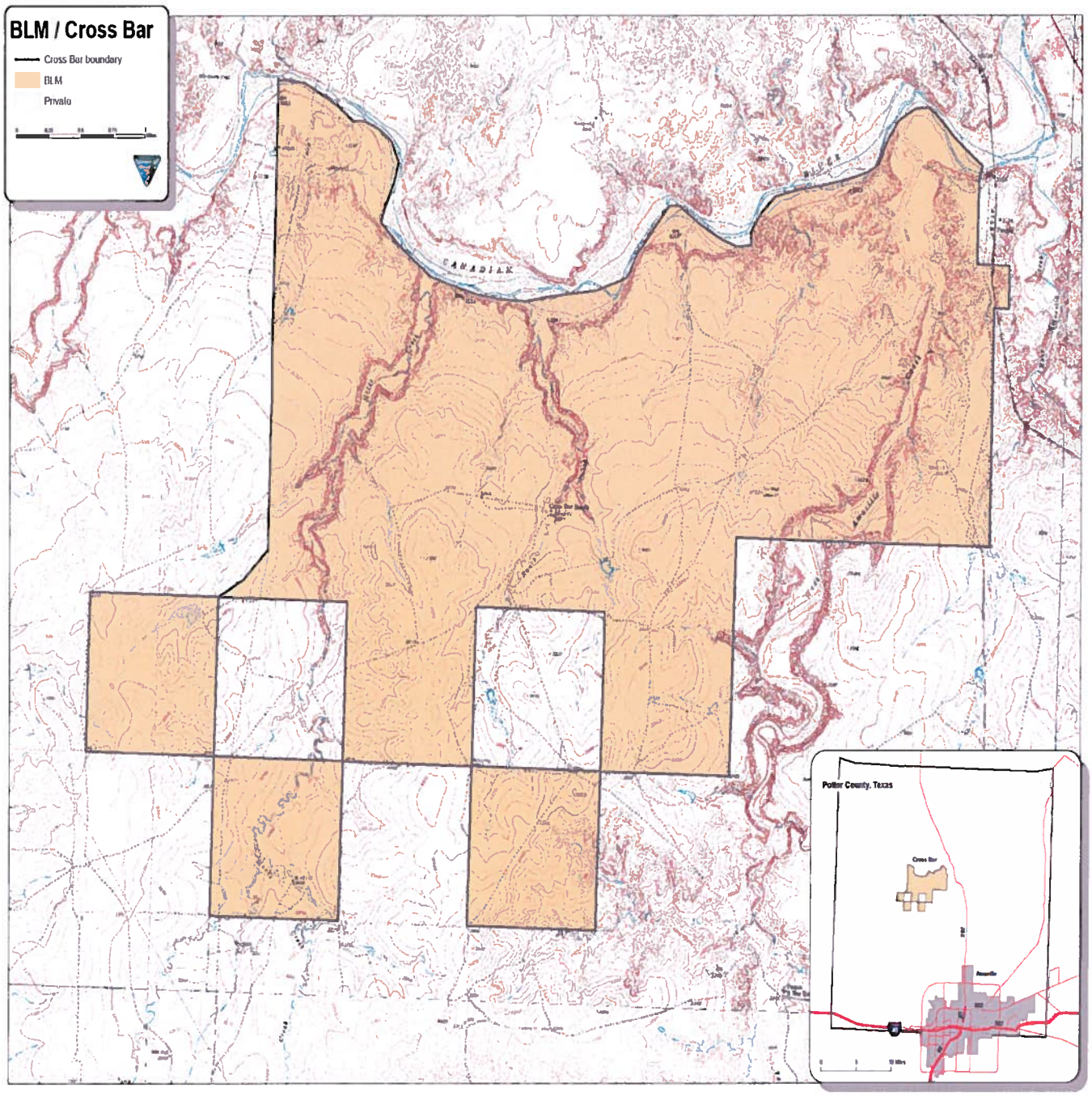

Fig. 1 Crossbar CMA Property: Proposed area is highlighted in yellow. The surrounding areas are privately owned. The eastern most creek is W. Amarillo Creek which maintains a perennial stream. The Canadian River is our northern most boundary which is owned and maintained by the State of Texas.

1. INTRODUCTION

A. Purpose and Need for the Proposed Action and Decision to be Made

The purpose of this proposed action is to drill new water wells on the Crossbar Management Area (CMA) east of the transmission lines that run north/south. These new water wells will be operated by submersible pumps and solar panels. The set up for the wells will be typical of what is already existent on the CMA which are comprised of stock tanks and an overflow dirt tank.

The decision to be made is whether to approve the drilling of new water wells as this action will have an impact on the surface, ground water, and the wildlife of the CMA.

B. Conformance with Land Use Planning and other Environmental Documents

The BLM, as a Federal agency within the Department of the Interior, is required to conduct land use planning and development according to the requirements of the Federal Land Policy Management Act of 1976, as amended. The addition of water wells is addressed in the BLM land use plan. This proposed action complies with the Resource Management Plan (2000) for the CMA.

1. Ecological Site Description:

   Natural Resource Conservation Service (MLRA 77C) Southern High Plains, Southern Part (see attached).

C. Statutes and Regulations

The following laws, acts, plans, manuals, and policies provide a foundation for water wells by the BLM:

- Federal Land Management Policy Act (FLPMA) of 1976, as amended..
- National Environmental Policy Act (NEPA) of 1969, as amended.
- All statutes and regulations regarding water wells will be adhered to.

2. PROPOSED ACTION AND ALTERNATIVES

A. Alternative 1: No Action

Under the No Action Alternative, there would be no addition of water wells on the CMA.

B. Alternative 2: Proposed Action

The Proposed Action is to add new water wells east of the north/south running transmission lines on the CMA. All well drilling, materials, and methods would be BLM approved. Standard operating procedures will be followed and are found in Appendix A.

1) If archeological materials such as chipped stone tools and debris, pottery, bone, historic ceramics, glass, metal, or building structures become exposed; **stop work at that spot immediately and contact the BLM Archeologist at (918) 621- 4187.**

Resources	Not Present On Location	No Impact	Potentially Impacted	Mitigation necessary	Comments included in EA text	BLM Evaluator Initial & Date
Riparian Zones/Wetlands	☐	x	☐	☐	☐	GT 10/29/12
Wildlife	☐	x	☐	☐	☐	GT 10/29/12
Special Status, T & E Species	☐	x	☐	☐	☐	GT 10/29/12
Cultural or Historical	☐	X	☐	X	☐	REH 1/31/13
American Indian Religious Concerns	X		☐	☐	☐	REH 1/31/13
Paleontology	X		☐	☐	☐	REH 1/31/13
Air Quality	☐	x	☐	☐	☐	AE 10/29/12
Water Quality (Surface/Ground)	☐	x	☐	☐	☐	AE 10/29/12
Soils (Watershed/Hydrology)	☐		x	☐	☐	AE 10/29/12
Floodplains	☐	x	☐	☐	☐	AE 10/29/12
Caves and Karst	x	☐	☐	☐	☐	AE 10/29/12
Hazardous or Solid Waste Materials	x	☐	☐	☐	☐	AE 10/29/12
Mineral Resources	x	☐	☐	☐	☐	AE 10/29/12
Farmlands, Prime or Unique	x	☐	☐	☐	☐	AE 10/29/12
Livestock Grazing	x	☐	☐	☐	☐	AE 10/29/12
Wild Horse and Burros	x	☐	☐	☐	☐	AE 10/29/12
Vegetation, Forestry	☐	x	☐	☐	☐	AE 10/29/12
Invasive, Non-native Species	☐	x	☐	☐	☐	AE 10/29/12
Visual Resources	☐	x	☐	☐	☐	AE 10/29/12
Recreation	☐	x	☐	☐	☐	AE 10/29/12
Transportation and Access	☐	x	☐	☐	☐	AE 10/29/12
Land Tenure, ROW, Other Uses	☐	x	☐	☐	☐	AE 10/29/12
Environmental Justice	☐	x	☐	☐	☐	AE 10/29/12

3.0 DESCRIPTION OF AFFECTED ENVIRONMENT

This section describes the environment that would be affected by implementation of the alternatives described in Section 2. Aspects of the affected environment described in this section focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included below in Table 2. Following the table, only the aspects of the affected environment that are potentially impacted are described.

A. General Topography

The action occurs east of the transmission lines on the CMA. It is unknown where the best available water well will be. Test holes must be drilled. General topography of the areas where wells are desired consists of gentle slopes. Precipitation averages 19 inches annually with the majority arriving as spring and fall thundershowers. Soils are dominated by clay/loam types. The treatment areas fall within Visual Resource Management (VRM) Class IV.

B. Riparian Zones and Wetlands

Several natural wetlands occur on the CMA. These wetlands include Horse Creek, Ranch Creek, and West Amarillo Creek. Both Horse Creek and Ranch Creek remain ephemeral and only hold water and have water movement during significant thunderstorms or other precipitation events. West Amarillo Creek contains within it a perennial creek. On the northern boundary of the CMA lies the Canadian River. While stream activity is low, this river is perennial and is used for hunting, fishing and recreational use. The Canadian River is managed by the State of Texas (Figure 2).

C. Wildlife

Wildlife habitats on the CMA are comprised of gently sloping pastureland primarily consisting of a vegetative cover composed of blue grama grass (*Bouteloua gracilis*), buffalo grass (*Bouteloua dactyloides*), sideoats grama (*Bouteloua curtipendula*), little bluestem (*Schizachyrium scoparium*), vine mesquite (*Panicum obtusum*) and other herbaceous plant species. Species of Texas's wildlife common to this area that one would expect to encounter would include, but not limited to, coyotes (*Canis latrans*), bobwhite quail (*Colinus virginianus*), mourning doves (*Zenaida macroura*), scissor-tailed flycatchers (*Tyrannus forficatus*), cottontail rabbits, mule deer, white-tailed deer, and pronghorn antelope. Other species of insects, mammals, birds, reptiles and amphibians which would occur are too numerous to list in this document.

D. Special Status, Threatened & Endangered Species

The group of species referred to here, and in the attached biological evaluation, as special status species (SSS) includes Federal and state listed threatened or endangered plant or animal species, species proposed for listing and species under review by the U. S. Fish and Wildlife Service (FWS) or the Texas Parks and Wildlife Department (TPWD). The authority for this policy and guidance regarding the evaluation of SSS comes from the Endangered Species Act of 1973, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and Department of Interior, Bureau of Land Management, Special Status Species Management (Manual 6840). There are no Wilderness Study Areas (WSA's) or Special Management Areas (SMA's) within the subject area.

E. Cultural or Historical

The proposed project will create three new water well sites. The area that will be disturbed will include the actual water well hole, a cleared pad for stock tanks, and cleared areas for overflow dirt tanks. This action will create new surface disturbance. Clearing of brush for placement of water wells will only be allowed at the surface within the culturally surveyed boundaries. To comply with Section 106 of the National Historic Preservation Act, as amended, a cultural resources survey was conducted. The study covered an area of 52.39 acres for the proposed water wells and clearance areas.

There are dozens of known archaeological and historic sites on the Crossbar Cooperative Management Area. Most of these are small, undatable lithic scatters but many sites are believed to date to the Antelope Creek Phase (1200 to 1450 AD). The Antelope Creek phase is characterized by semi-subterranean, multi-room compounds or single-family homesteads made of dolomite slabs. Near exclusive use of the color-banded chert from nearby Alibates Quarry is a defining characteristic of this period.

Historic cattle ranching and oil production was common throughout the area and items associated with such activities are likely present.

One previously unrecorded historic period site, 41PT503, and three isolated finds were documented during the survey. Site 41PT503 is an abandoned historic well with associated trash scatter and the remnants of a possible boiler foundation. Site 41PT503 will be avoided by at least 50 feet outside of the designated site boundary in Survey Area 3. Survey Areas 1 and 2 had no historic or prehistoric cultural resources and the placement of the well will be allowed anywhere within the surveyed areas. The three isolates included a tertiary chert flake, a biface tool, and a historic whisky bottle.

F. American Indian Religious Concerns

Traditional Cultural Properties (TCPs) are places that have cultural values that transcend the values of scientific importance that are normally ascribed to cultural resources such as

archaeological sites. Native American communities are most likely to identify TCPs, although TCPs are not restricted to those associations. Some TCPs are well known, while others may only be known to a small group of traditional practitioners, or otherwise only vaguely known.

There are several pieces of legislation or Executive Orders that should be considered when evaluating Native American religious concerns. These govern the protection, access and use of scared sites, possession of sacred items, protection and treatment of human remains, and the protection of archaeological resources ascribed with religious or historic importance. These include the following:

- The American Indian Religious Freedom Act of 1978 (AIRFA; 42 USC 1996, P.L. 95-431 Stat. 469).
- Executive Order 13007 (24 May 1996).
- The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; 25 USC 3001, P.L. 101-601).
- The Archaeological Resources Protection Act of 1979 (ARPA; 16 USC 470, Public Law 96-95).

As described above, approximately 52.39 acres have been inventoried for cultural resources for the proposed construction. The proposed action would result in short-term and long-term change and altered utilization of the site and immediate surrounding area.

For the Proposed Action, identification of TCPs were limited to reviewing existing published and unpublished literature, and BLM tribal consultation efforts specific to this proposed action with the Comanche Nation of Oklahoma, the Apache Tribe of Oklahoma, and the Kiowa Tribe of Oklahoma.

G. Paleontology

Approximately 52.39 acres have been inventoried for cultural and paleontological resources for the proposed construction. The proposed action would result in short-term and long-term change and altered utilization of the site and immediate surrounding area. Paleontological Resources are of scientific interest and may require protection. The management of paleontological resources is directed under the Federal Land Policy and Management Act (FLPMA) and the National Environmental Policy Act (NEPA). The Federal Land Management and Policy Act of 1976 (FLMPA) states that it is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values. Paleontological resources are natural resources with scientific value under FLPMA. NEPA mandates that federal agencies prepare a detailed statement of "major federal actions significantly affecting the quality of the human environment."

The new authority for the management, preservation, and protection of paleontological resources on public lands, including Department of the Interior Agencies is the Paleontological Resources Preservation subtitle of the Omnibus Public Land Management Act of 2009 (16 USC 470aaa et seq.), also known by its popular name, the Paleontological

Resources Preservation Act (PRPA). In accordance with the PRPA, paleontological resources on Federal land must be managed and protected using scientific principles and expertise.

H. Air Quality

Not Applicable

I. Water Quality: Surface and Groundwater

1. Surface Water

No riparian areas or wetlands have been identified as threatened within the project area where construction would occur, and the proposal does not occur on or cross Army Corps of Engineer jurisdictional waters.

2. Groundwater

The Ogallala Water Aquifer is identified as underlying Potter County, TX. The Ogallala, Tecovas, and Permian rock formations are expected to be encountered and explored while drilling for prime water well sites.

J. Soils – Watershed and Hydrology

Soils are dominated by clay/loam types.

K. Floodplains

The CMA is located outside of city limits and is not located in a floodplain. There are, however; tributaries that drain into the Canadian River which makes the northern boundary immediately at the Canadian River boundary a flood plain. These tributaries will not be affected by the proposed actions.

L. Caves and Karst

No known cave or karst areas exist within the project area.

M. Hazardous or Solid Waste Materials

BLM Instruction Memorandum WO-93-344 requires that all NEPA documents list and describe any hazardous and/or extremely hazardous substances that would be produced, used, stored, transported or disposed of as a result of the proposed project. As a BLM facility, the CMA must comply with the Federal Facility Compliance Act. This act essentially requires the facility to be in compliance with all environmental laws. The CMA is regularly audited as part of the BLM's Compliance Assessment -Safety, Health, and Environment (CASHE) Program. All findings, including those classified under the hazardous waste (HWGEN)

category are required to be corrected.

N. Mineral Resources

There are no mineral resources at the CMA to consider for impact analysis.

O. Farmlands, Prime or Unique

No farmlands, prime or unique are located within this project area.

P. Livestock Grazing

Livestock grazing does not occur on the CMA.

Q. Wild Horse and Burros

There are no wild horse or burro programs in effect on the CMA.

R. Vegetation and Forestry

The natural vegetation is a mixture of short grass species and shrub species which is distinct to the Southern Great Plains. Vegetation on, and surrounding the CMA is derived from gently sloping pastureland with a vegetative cover composed of buffalo grass and blue grama, and dense stands of mesquite and cholla cactus.

S. Invasive and Non-native Species

Honey Mesquite, cholla cactus, salt cedar, bull thistle and various other grass and woody species occur on the CMA.

T. Visual Resources

The Proposed Action would not affect any visual resources as water wells would be constructed with a solar panel and solar submersible pump. A typical windmill set up will not be utilized.

U. Recreation

Recreational activities are conducted at the CMA. They include, hiking, photography, walking and hunting. However, these activities are limited to approximately 350 individual visit days per year.

V. Transportation and Access

The only roads at the CMA are two-track pasture roads in which access is restricted via locked gates. The CMA roads are not accessible to the public.

W. Land Tenure, Rights-of-Way (ROWs), Other Realty Uses, Issues, or Concerns

ROW's are provided to adjacent farmers. There are no other realty concerns.

X. Environmental Justice

This project will be conducted on the existing CMA which is absent of minority or impoverished areas.

1. ENVIRONMENTAL CONSEQUENCES: DIRECT AND INDIRECT EFFECTS

A. Alternative 1: No Action

Not drilling new wells will only perpetuate non-equal water distribution on the CMA.

B. Alternative 2: Proposed Action

Alternative 2, the Proposed Action would make available water more equally distributed across the CMA surface area. Benefits of the Proposed Action are an increase in water availability for wildlife and for any future livestock grazing. Equal water distribution decreases over utilization of certain areas by both wildlife and livestock. An alternative to this proposed action would be to not drill new water wells.

1. General Topography

The drilling and erection of new water wells (where best suited) is not anticipated to have a significant impact on the general topography of the CMA.

2. Riparian Zones and Wetlands

Water well drilling and erection on the CMA should not adversely impact any wetlands or riparian zones.

3. Wildlife

The species composition and population levels of the species of wildlife using these lands

would go through seasonal and year-to-year fluctuations directly related to vegetation condition factors on the property. These adjustments would be exhibited by the wildlife populations present. Further, the actions will have a desirable impact on habitat and is anticipated to have a positive impact on wildlife species distribution. Overflow dirt tanks at the new water well sites will be lined with bentonite clay and pvc lining to reduce infiltration. These overflow dirt tanks will enhance water sources for stop-over by water fowl and other migratory birds during their migrations.

4. Special Status, Threatened & Endangered Species

No further biological evaluation is necessary regarding this project at this location.

5. Cultural or Historical

Direct and Indirect Impacts

The proposed project will create three new water wells but with the mitigation measures, there will be no impacts to cultural resources.

Mitigation Measures

Site 41PT503 will be avoided by at least 50 feet outside of the designated site boundary in Survey Area 3. Maps have been provided to the NRS at Amarillo in charge of the project and they will be responsible for ensuring that the site does not get disturbed during construction. Survey Areas 1 and 2 had no historic or prehistoric cultural resources and the placement of the well will be allowed anywhere within the surveyed areas.

In the event that water well drilling and erection is found in the future to have an adverse effect on cultural resources, the BLM, in consultation with the affected tribe(s), will take action to mitigate or negate those effects. Measures include, but are not limited to physical barriers to protect resources, relocation of practices responsible for the adverse effects, or other treatments as appropriate.

If archeological materials such as chipped stone tools, pottery, bone, historic ceramics, glass, metal, or building structures are exposed during construction; stop work at that spot immediately and contact the BLM archeologist at (918) 621-4100. In these situations, the National Historic Preservation Act, as amended, ARPA or, Texas Administrative Code under Cultural Resources (Chapters 25 & 26) may apply and its procedures followed.

If human remains are discovered the procedures of the Texas Health & Safety Code (Section 711.010 Unknown or Abandoned Cemetery) or the NAGPRA shall apply, as appropriate.

6. Native American Indian Religious Concerns

Direct and Indirect Impacts of American Federal Religious Concerns

The proposed project will create three new water wells. There will be some disturbance on the land near the water well sites as stock tanks will be placed near the well site and overflow dirt tanks will be constructed. The Comanche Nation of Oklahoma, the Apache Tribe of Oklahoma, and the Kiowa Tribe of Oklahoma were sent consultation notifications and allowed comment and review. Only the Comanche Nation responded and states that they have no current listings in the project area.

No site specific TCPs or other areas of traditional religious and cultural importance have been identified.

Mitigation Measures

In the event that water well drilling and erection is found in the future to have an adverse effect on Native American TCPs or cultural resources, the BLM, in consultation with the affected tribe(s), will take action to mitigate or negate those effects. Measures include, but are not limited to physical barriers to protect resources, relocation of practices responsible for the adverse effects, or other treatments as appropriate.

7. Paleontology

Direct and Indirect Impacts

No concentrations of vertebrate fossils or bone beds are known to occur within the APE, and there is a very low probability of any occurring within the APE.

Mitigation Measures for Impacts to Paleontological Resources

If paleontological material such as vertebrate fossils are exposed; stop work at that spot immediately and contact the BLM archeologist at (918) 621-4100. In the event that lease development practices are found in the future to have an adverse effect on paleontological resources, the operator and the BLM will take action to mitigate or negate those effects. Measures include, but are not limited to physical barriers to protect resources, relocation of practices responsible for the adverse effects, or other treatments as appropriate.

8. Air Quality

The proposed action would have no effect on air quality.

9. Water Quality: Surface and Groundwater

A. Surface Water

The proposed action would have no effect on surface water.

B. Groundwater

The proposed action will draw water from available groundwater sources.

10. Soils

The soils in the CMA will not be affected.

11. Floodplains

The proposed action would have no effect on floodplains.

12. Caves and Karst

No known cave or karst areas exist within the project area.

13. Hazardous or Solid Waste Materials

There are no significant direct or indirect effects regarding hazardous or solid waste materials for the CMA. Any hazardous materials would be stored at a BLM approved location.

14. Mineral Resources

Not Applicable.

15. Farmlands, Prime or Unique

The proposed action would have no effect on any farmlands or any other lands considered prime or unique.

16. Livestock Grazing

Livestock grazing does not occur on the CMA. However, should livestock grazing become optional in the future, greater water availability will assist in more even grazing by livestock and wildlife.

17. Wild Horse and Burro Grazing

No wild horse and burros occur on the CMA.

18. Vegetation and Forestry

There would be no direct or indirect effect to the vegetation and forestry of the area outside of

the area at the CMA.

19. Invasive and Non-native Species

There would be no indirect or direct effect to invasive or non-native species.

20. Visual Resources

The proposed action would not be out of character with current and past land use patterns.

21. Recreation

There would be no direct or indirect effects to recreation at the CMA.

22. Transportation and Access

There would be no direct or indirect effects to transportation and access.

23. Land Tenure, Rights-of-Way (ROWs), Other Realty Uses, Issues, or Concerns

There are no ROW's or other realty concerns associated with this project.

24. Environmental Justice

There are no environmental justice concerns associated with this proposed action.

2. CUMULATIVE IMPACTS

It is not anticipated that there would be any cumulative impacts to the CMA or surrounding area. Major benefits of the proposed action are better management and use of the land.

MONITORING, MITIGATION MEASURES, AND BEST MANAGEMENT PRACTICES

The effectiveness of this proposed action will be monitored every year. Mitigation measures necessary regarding implementation of this project include following BLM standards.

Site 41PT503 will be avoided by at least 50 feet outside of the designated site boundary in Survey Area 3. Maps have been provided to the NRS at Amarillo in charge of the project and

they will be responsible for ensuring that the site does not get disturbed during construction. Survey Areas 1 and 2 had no historic or prehistoric cultural resources and the placement of the well will be allowed anywhere within the surveyed areas.

If archeological materials such as chipped stone tools, pottery, bone, historic ceramics, glass, metal, or building structures are exposed during construction; stop work at that spot immediately and contact the BLM archeologist at (918) 621-4100. In these situations, the National Historic Preservation Act, as amended, ARPA or, Texas Administrative Code under Cultural Resources (Chapters 25 & 26) may apply and its procedures followed. If human remains are discovered the procedures of the Texas Health & Safety Code (Section 711.010 Unknown or Abandoned Cemetery) or the NAGPRA shall apply, as appropriate.

3. BLM TEAM MEMBERS

NAME	TITLE	ORGANIZATION
Danita Burns	Acting Field Manager	BLM, AmFO, Amarillo, TX
Sam Burton	Assistant Field Manager	BLM, AmFo, Amarillo, TX
Adrian Escobar	Natural Resource Specialist	BLM, AmFO, Amarillo, TX
George Thomas	Senior Wildlife Biologist	BLM, OFO, Tulsa
Ryan Howell	Archaeologist	BLM, OFO, Tulsa

4. REFERENCES

1969 National Environmental Policy Act (as amended):
http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm

1973 Endangered Species Act (as amended):
http://www.fws.gov/laws/lawsdigest/esact.html

1976 Federal Land Policy and Management Act (as amended):
http://www.blm.gov/flpma/

Federal Laws and Regulations Executive Order 13112 of February 3, 1999 – Invasive Species:

Fields, Richard. Zone Archeologist: Bureau of Land Management (pers. comm. April 2011)

Natural Resource Conservation Service: Ecological Site Description.

The Federal Land Policy and Management Act of 1976, as amended:
http://www.blm.gov/flpma/

Title 40 Code of Federal Regulations § 1500:
http://ceq.hss.doe.gov/nepa/regs/ceq/toc_ceq.htm

Title 40 Code of Federal Regulations § 81.337:
http://www.google.com/url?sa=t&source=web&cd=1&ved=0CCAQFjAA&url=http%3A%2F%2Fedocket.access.gpo.gov%2Fcfr_2009%2Fjulqtr%2Fpdf%2F40cfr81.337.pdf&ei=f22LTe_ABo-isAOqh5yJCg&usg=AFQjCNFHbbqO8ZtsBM3O2qiPcpipDRs5Xw

Title 43 Code of Federal Regulations § 1600:
http://www.access.gpo.gov/nara/cfr/waisidx_08/43cfr1600_08.html

Title 43 Code of Federal Regulations § 4700
http://www.access.gpo.gov/nara/cfr/waisidx_08/43cfr4700_08.html

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http://www.google.com/url?sa=t&source=web&cd=1&ved=0CBgQFjAA&url=http%3A%2F%2Fwww.blm.gov%2Fpgdata%2Fetc%2Fmedialib%2Fblm%2Fca%2Fpdf%2Fpdfs%2Fpa_pdfs%2Fbiology_pdfs.Par.9d22a8ee.File.dat%2F6840_ManualFinal.pdf&ei=MWeLTZGbF4-gsAOc1oCmCg&usg=AFQjCNFduaOsrXn3TsGTVcY8Uy3SmEvcoQ

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http://waterdata.usgs.gov/nwis

Thomas, George. Senior Wildlife Biologist: Bureau of Land Management. (personal comm.. April 2011).

MLRA 77C - Southern High Plains, Southern Part

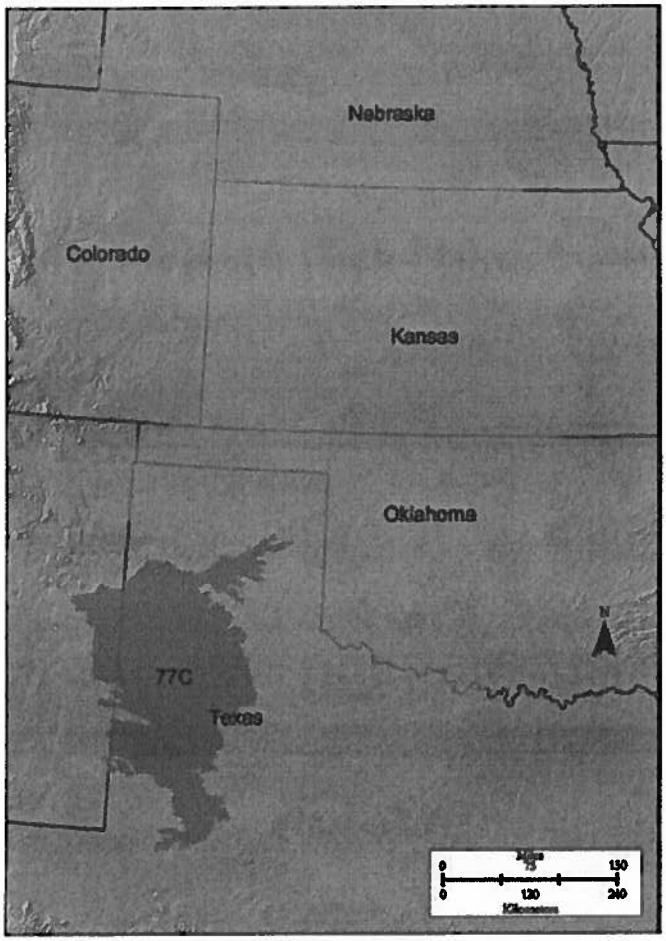


Figure 77C-1: Location of MLRA 77C in Land Resource Region H

Introduction

This area (shown in fig. 77C-1) is in western Texas (90 percent) and eastern New Mexico (10 percent). It makes up about 20,955 square miles (54,300 square kilometers). The cities of Amarillo and Lubbock, Texas, and the towns of Brownfield, Floydada, Hereford, Lamesa, Levelland, Littlefield, Muleshoe, and Plainview, Texas, and Clovis, Grady, and Portales, New Mexico, are in this MLRA. Interstate 40 crosses the northern end of this area, and Interstate 27 connects Amarillo and Lubbock, Texas. The Cannon Air Force Base is in the part of the area in New Mexico, and the Reese and Webb Air Force Bases are in the part in Texas. The area has a number of national wildlife refuges.

Physiography

This area is in the High Plains Section of the Great Plains Province of the Interior Plains. It is characterized by extensive areas of open plains on a distinct elevated plateau. The area is bounded by the Canadian Breaks to the north, steep escarpments overlooking the Rolling Red Plains to the east, and the Edwards Plateau to the south. To the west, the plains grade indiscernibly into the Southern High Plains, Southwestern Part (MLRA 77D). A few draws with moderate to steep slopes and very narrow flood plains are incised into the plateau and trend generally from northwest to southeast. Numerous playa basins ranging from 5 to 160 acres (2 to 65 hectares) in size dot the landscape. Elevation is 4,600 feet (1,400 meters) in the northwestern part of the area and gradually decreases to 2,600 feet (795 meters) in the southeastern part. The topographical relief is dominated by nearly level and very gentle slopes.

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Brazos Headwaters (1205), 44 percent; Red Headwaters (1112), 28 percent; Upper Colorado (1208), 22 percent; Red-Washita (1113), 4 percent; and Lower Canadian (1109), 2 percent. A few streams in the northern part of this area drain to the north into the Canadian River, which is outside this area. Many headwater streams of the Red River are in this area, and some of the headwaters of the Brazos and Colorado Rivers are in the southern part of the area.

Geology

The surface of this area is covered primarily by eolian deposits in the Blackwater Draw Formation of Pleistocene age. Lacustrine deposits of dolomite with interbedded clastic sediments are both laterally extensive where they are of Pliocene age (Blanco Formation) and more local where they are of Pleistocene age (Tule, Double Lakes, and Tahoka Formations). Locally, draws inset alluvial deposits in the Ogallala Formation of Miocene-Pliocene age.

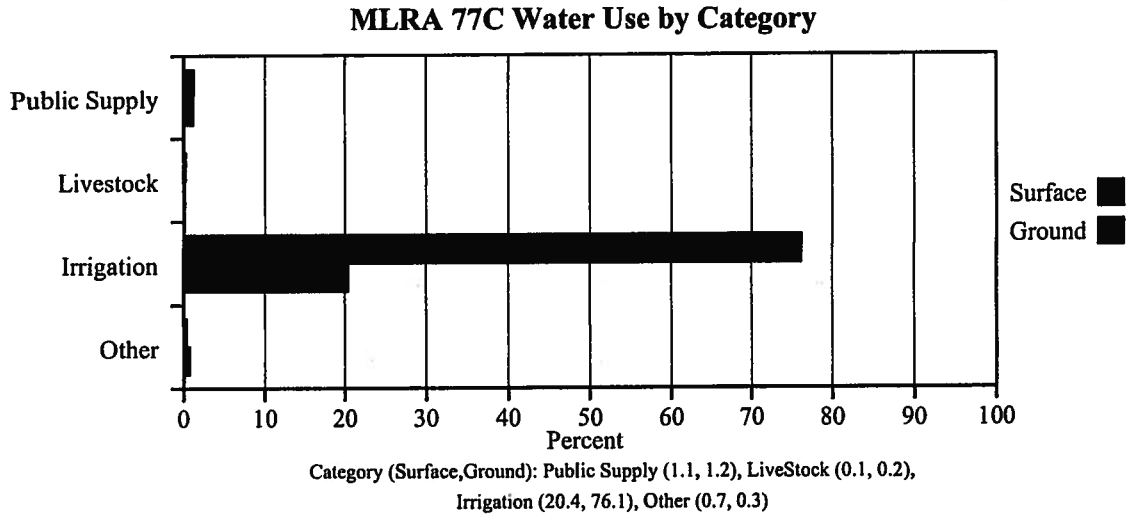
Climate

The average annual precipitation in this area is 16 to 22 inches (405 to 560 millimeters), fluctuating widely from year to year. Most of the rainfall occurs as high-intensity, convective thunderstorms during late spring and early fall. The average annual temperature is 55 to 63 degrees F (13 to 17 degrees C). The freeze-free period averages 225 days and ranges from 195 to 255 days, increasing in length from north to south.

Water

The total withdrawals average 3,800 million gallons per day (14,385 million liters per day). About 78 percent is from ground water sources, and 22 percent is from surface water sources. The moderately low, erratic precipitation is the source of water for dry-farmed crops and for range. Few perennial streams are in the area. Their flow fluctuates widely from year to year, and their water is little used for irrigation. The headwaters of both the Brazos and Colorado Rivers receive high salt loads from natural sources downstream from this area.

Irrigation water is obtained from wells in the High Plains or Ogallala aquifer, but withdrawals exceed recharge and the water table is gradually declining. In some areas the declining water table and increasing energy costs have resulted in the conversion of previously irrigated cropland to dry-farmed cropland. The High Plains aquifer is called the Eastern New Mexico Basin Fill aquifer in the part of this area in New Mexico. The High Plains aquifer is not actually a basin fill deposit, but its water is so similar in quality to that of other basin fill aquifers in New Mexico that it is lumped with them. The ground water in this area is very hard and has a median level of total dissolved solids of 400 to 500 parts per million (milligrams per liter).



Category (Surface,Ground): Public Supply (1.1, 1.2), LiveStock (0.1, 0.2), Irrigation (20.4, 76.1), Other (0.7, 0.3)

Soils

The dominant soil orders in this MLRA are Alfisols, Inceptisols, Mollisols, and Vertisols. The soils in the area dominantly have a thermic soil temperature regime, an ustic soil moisture regime, and mixed mineralogy. They generally are moderately deep to very deep, well drained, and clayey, loamy, or sandy.

Paleustalfs (Amarillo and Arvana series) formed in loamy eolian sediments (Amarillo series) and sandy eolian sediments (Brownfield, Patricia, and Plains series) on nearly level to gently sloping plains. They also formed in loamy eolian sediments on nearly level to very gently sloping plains and the side slopes of drainageways and playa basins (Posey series). Haplustalfs formed in loamy eolian sediments (Tokio series) and sandy eolian sediments (Yoakran series) on nearly level to gently sloping plains. Calciustepts formed in loamy eolian sediments on nearly level to gently sloping plains or playa steps within playa basins (Arch and Gomez series), on dunes on the margins of playa basins (Drake series), and on plains and the side slopes of drainageways and playa basins (Midessa series). Ustipsamments (Nutivoli series) formed in sandy eolian sediments on dunes. Haplusterts (Chapel, Lazbuddie, Lockney, McLean, Ranco, Randall, and Sparenberg series) formed in clayey lacustrine deposits on playa floors within playa basins.Paleustolls (Acuff, Friona, Olton, Pantex, and Pullman series) formed in loamy and clayey eolian sediments on plains. They also formed in mixed alluvium and eolian sediments (Estacado series) and in loamy eolian sediments (Mansker series) on plains and shoulder slopes along drainageways and in playa basins. Calciustolls formed in loamy eolian sediments (Pep series) and in lacustrine deposits (Portales series) on plains and the side slopes of drainageways and playa basins.

Biology

The northeastern part of this area supports dominantly short and mid prairie grasses and sparse trees and shrubs. Fine textured soils on broad, nearly level plains support a plant community of short grasses and a few mid grasses. The most common species are blue grama and buffalograss; blue grama is dominant. In areas of moderately fine textured soils on very gently to moderately sloping plains, the plant community consists of mixed short and mid grasses and sideoats grama is the dominant species.

The southwestern part of this area primarily supports mixed prairie grasses and sparse trees and shrubs. Moderately fine textured and moderately coarse textured soils on nearly level to gently sloping plains and gently to strongly sloping sandhills are characterized by a mixture of tall and

mid grasses and lesser amounts of short grasses. On loamy soils, mid grasses tend to dominate and sideoats grama is the dominant species. Woody shrubs, particularly yucca, catclaw, and sand sage, make up 5 percent or less of the plant community. On sandy soils, nearly half of the grasses in the plant community are tall grasses, such as little bluestem and sand bluestem. Woody shrubs, specifically sand sage, shin oak, and skunkbush, make up 20 to 30 percent of the plant community on the sandy soils.

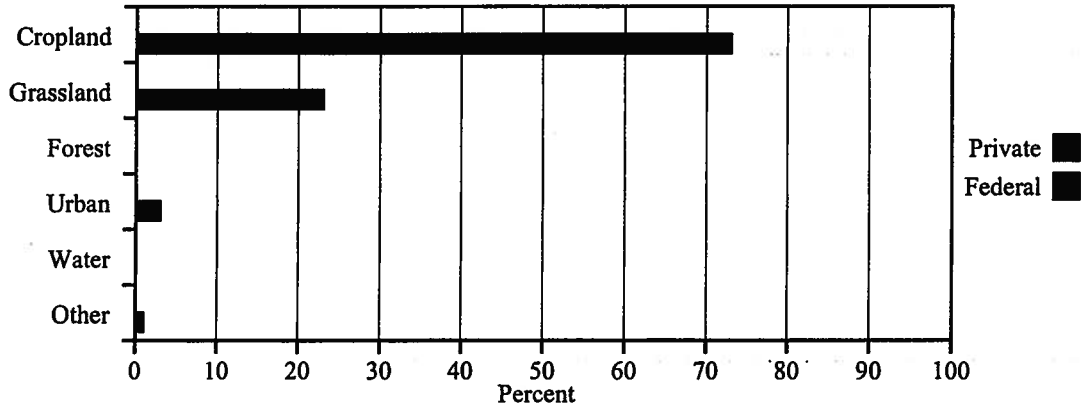
Some of the major wildlife species in this area are mule deer, white-tailed deer, coyote, badger, raccoon, skunk, jackrabbit, cottontail, turkey, pheasant, Canada goose, scaled quail, bobwhite quail, and mourning dove. The species of fish in the area include bass, bluegill, catfish, and bullhead.

Land Use

Farmland makes up nearly all of this area. It is mainly cropland. A lesser percentage of the farmland consists of rangeland, improved pasture, and wildlife habitat, primarily in the southern and western parts of the area. The principal crops are wheat, grain sorghum, and corn in the northern part of the area and cotton, grain sorghum, and peanuts in the southern part. Minor crops include soybeans, sunflowers, alfalfa hay, and forage sorghum. Confined animal-feeding operations, primarily for beef cattle, are economically important in the area. In some areas beef cattle graze small grain pastures throughout the winter.

The major soil resource concerns are wind erosion, water erosion, maintenance of the content of organic matter and productivity of the soils, and management of soil moisture. Conservation practices on cropland generally include systems of crop residue management (especially no-till systems that reduce the need for tillage), cover crops, windbreaks, vegetative wind barriers, wind stripcropping, and nutrient management. The most important conservation practice on rangeland is prescribed grazing. Generally, cultural treatments are not used to increase forage production on the rangeland in this area. Haying commonly provides supplemental feed during the long winters.

MLRA 77C Land Use by Category



Category (Private,Federal): Cropland (73.0, 0.0), Grassland (23.0, 0.0), Forest (0.0, 0.0), Urban (3.0, 0.0), Water (0.0, 0.0), Other (1.0, 0.0)

6. FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD

Decision: It is my decision to authorize the proposed action on the Crossbar Management Area. Mitigation measures identified in the environmental impacts section of the Environmental Assessment have been formulated into stipulations. This decision incorporates by reference, the attached stipulations.

Finding of No Significant Impacts: Based on the analysis of potential impacts contained in this Environmental Assessment, I have determined that impacts are not expected to be significant and an environmental impact statement is not required.

Rationale for Decision: The installation and exploration of water wells on the CMA will provide more natural water availability for the native species that occur on the CMA. Water well construction and exploration will have minimal impacts to the surface and surrounding area.

Danita Burns (Acting) AmFO Manager

12-13-2012
Date

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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TAKE PRIDE IN AMERICA

RE: **Biological Evaluation for New Solar Powered Water Well Installations within the Crossbar Cooperative Management Area.** Environmental Assessment DOI-BLM-NM-060-2013-003, Potter County, TX.

The Bureau of Land Management's (BLM) environmental assessment (EA- DOI-BLM-NM-060-2013-003) for this project contains all pertinent information regarding the specific characteristics of this proposed project. The purpose of this report is to document BLMs biological determination of effect based on the Biological Evaluation (BE) conducted for this site. The purpose of this proposed action is to drill new water wells on the Crossbar Management Area (CMA) east of the transmission lines that run north/south. Well set up will be typical of what is already existent on the CMA; being comprised of stock tanks and overflow dirt tanks.

U.S. Fish and Wildlife Services National Wetlands Inventory Puente, TX Quad map shows that the well installations are to occur within the floodplain of the North Canadian River in most of the installation reach. However, no wetland or riparian areas will be impacted by this fence installation project.

The Service's federally-listed endangered, threatened, proposed, and candidate species for Potter County, Texas consist of the interior least tern, whooping crane, lesser prairie chicken, and Arkansas River Shiner. Critical habitat has been designated for the Arkansas River shiner. State of Texas listed threatened and endangered species include the peregrine falcon, bald eagle, black bear, and Texas horned lizard. Occurrences of the Texas horned lizard have been documented on the CMA. The Arkansas River shiner is also known to occur within the stretch of the North Canadian River. No other special status, or Federally listed threatened or endangered species are known to occur within 20 miles of the CMA. No impacts are anticipated to the above mentioned species as the result of installing new water wells on the CMA.

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between and among the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, incidental, unintentional, and accidental take, killing, or possession of a migratory bird or its parts, nests, eggs or products, manufactured or not, without a permit is unlawful. The MBTA has no provisions for a permitting process which allows for regulated "take" of migratory birds. Sixteen Birds of Conservation Concern are listed for the shortgrass prairie (Bird Conservation Region 18), where this project occurs. Breeding bird surveys conducted near the site found four species from that list, the mountain plover, long-billed curlew, burrowing owl, and lark bunting. Surveys in 2004 on the CMA found only two species listed for Bird Conservation Region #18, the burrowing owl and lark bunting. Whereas the solar well installations occur in areas with birds of conservation concern, it is not likely to adversely impact the populations of any of these bird species.

Based on all the information discussed above, the biological determination of effect for federally listed species regarding this project is **"NO EFFECT"** and the biological determination for Arkansas River shiner critical habitat is **"NO ADVERSE MODIFICATION"**. The biological determination for Texas listed species is **"NO IMPACT"**.

George Thomas, Senior Wildlife Biologist ; 2-6-2013 Date

United States Department of the Interior

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Tulsa, Oklahoma 74145
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TAKE PRIDE IN AMERICA

In Reply Refer To:

Crossbar Management Area: New Water Wells (NM-040-2013-28)
Legal location: G&M A-528, G&M A-530, G&M A-532 Surveys of Potter County, Texas.
EA# DOI-BLM-NM-060-2013-003EA
CRR# NM-040-2013-28
Natural Resource Specialist: Adrian Escobar

A total of 52.39 acres were surveyed by Ryan Howell and Larry Moore (BLM Archaeologists) on November 8 and 9, 2012, for the proposed 3 new water wells on the Crossbar Management Area in Potter County, Texas. The exact location of each well drill hole is not yet known, but to give the project the necessary space to place the water wells, various acreages were surveyed at each proposed locations.

One previously unrecorded historic period site, 41PT503, and three isolated finds were documented during the survey. Site 41PT503 is an abandoned historic well with associated trash scatter and the remnants of a possible boiler foundation. Further information needs to be gathered to fully determine the eligibility to the National Register of Historic Places (NRHP) for this site. **Site 41PT503 will be avoided by at least 50 feet outside of the designated site boundary** in Survey Area 3. Survey Areas 1 and 2 had no historic or prehistoric cultural resources and the placement of the well will be allowed anywhere within the surveyed areas. The three isolates included a tertiary chert flake, a biface tool, and a historic whisky bottle. These are categorically ineligible for the NRHP. Additionally, no fossils were found and no additional research was recommended. A determination of ***no historic properties affected*** is made since the proposed project will have no effect on the archaeological site that is present within the Area of Potential Impact in Survey Area 3.

Copies of BLM's report were mailed on December 26, 2012, to the Texas Historical Commission (SHPO), the Comanche Nation of Oklahoma, the Apache Tribe of Oklahoma, and the Kiowa Tribe of Oklahoma for comment and review. In a letter dated January 31, 2012, SHPO provided concurrence with the recommendations of the BLM. The Comanche Nation responded that they have no current listings in the project area in a letter dated January 25, 2013.

A finding of ***no historic properties affected*** has been made for the project as staked at the time of survey and the project may proceed as planned without further cultural work.

If archeological materials such as chipped stone tools, pottery, bone, historic ceramics, glass, metal, or building structures are exposed during construction; stop work at that spot immediately and contact the BLM archeologist at (918) 621-4100. In these situations, the National Historic Preservation Act, as amended, ARPA or, Texas Administrative Code under Cultural Resources (Chapters 25 & 26) may apply and its procedures followed. If human remains are discovered the procedures of the Texas Health & Safety Code (Section 711.010 Unknown or Abandoned Cemetery) or the NAGPRA shall apply, as appropriate.

Ryan Howell, Archeologist ; 2/1/13 Date

Appendix

Special Conditions of Approval

Archeology/Cultural: If archeological materials such as chipped stone tools, pottery, bone, historic ceramics, glass, metal, or building structures are exposed during construction; stop work at that spot immediately and contact the BLM archeologist at (918) 621-4100. In these situations, the National Historic Preservation Act, as amended, ARPA or, Texas Administrative Code under Cultural Resources (Chapters 25 & 26) may apply and its procedures followed. If human remains are discovered the procedures of the Texas Health & Safety Code (Section 711.010 Unknown or Abandoned Cemetery) or the NAGPRA shall apply, as appropriate.

- Site 41PT503 will be avoided by at least 50 feet outside of the designated site boundary in Survey Area 3. Maps have been provided to the NRS at Amarillo in charge of the project and they will be responsible for ensuring that the site does not get disturbed during construction. Survey Areas 1 and 2 had no historic or prehistoric cultural resources and the placement of the well will be allowed anywhere within the surveyed areas.

- In the event that lease development practices are found in the future to have an adverse effect on significant cultural resources, Traditional Cultural Properties, or paleontological resources, the operator and the BLM, in consultation with the affected tribe(s), and the Texas State Historic Preservation Officer will take action to mitigate or negate those effects. Measures include, but are not limited to physical barriers to protect resources, relocation of practices responsible for the adverse effects, or other treatments as appropriate.

- These conditions apply as essential terms and conditions of this project. These requirements are made to comply with Section 106 of the National Historic Preservation Act as amended, the Native American Graves Protection and Repatriation Act, and the Code of Federal Regulations 36 CFR Part 800.